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ABSTRACT

Despite rising sentiment, the decision to "de-school" society seems premature unless it derives from a comparative empirical assessment of school and nonschool educational programs' relative contributions to national goals. One of many new alternative systems, Kenya's village polytechnics (low-cost primary training centers in rural areas) are widely perceived to be alleviating unemployment and manifesting self-help. The polytechnic is significant as an ideological movement whose essence is an attempt to break away from conventional concepts and to develop types of training rooted in practical local and individual needs, conveying a sense of individual purpose and a capacity for continuing self-instruction. Data are used to illustrate the movement's achievements, problems, and potential in the task of national development--its major problems have derived from the pervasiveness of the ethic of formal schooling; part of the movement's achievement and much of its potential lie in the extent to which the polytechnics have nevertheless exemplified significant new principles of education: flexibility, availability, individualization, and relevance. The data suggest, however, that the alternative system must await modifications in the present social structure linking schooling and wage incentives before it can have extensive impact on educational philosophy and practice in Kenya. (Author/AJ)

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DILEMMAS OF DEVELOPMENT: THE VILLAGE POLYTECHNIC MOVEMENT AS A SHADOW SYSTEM OF EDUCATION IN KENYA

By

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ABSTRACT

The need for training which complements the established formal school system in Kenya is indicated by the growth of the National Youth Service, Youth Centres and Village Polytechnics. This paper contends that the particular significance of the Village Polytechnic Movement lies not simply in its reflection of the 'Harambee' spirit and its role in vocational training, but also in the fact that it may contain the first faint stirrings of a new educational ideology for Kenya. The purpose of the paper is to identify from the recent experience of polytechnics some of the significant features of this emerging ideology.

A model of formal institutional secondary schooling is used to contrast the ideals of the Village Polytechnic Movement which aim to create a type of training rooted in individual experience and local need. The main part of the paper draws on survey data to illustrate some of the dilemmas which polytechnics are facing in their attempt to give substance to these ideals. The data reveal the strength and pervasiveness of the myth of institutional schooling in patterning the development of polytechnics. Despite this influence however it is clear that certain polytechnics do exemplify significant new educational principles and hold out the potential of an important contribution to solving problems associated with youth employment and occupation. Five distinct types of polytechnic are identified and briefly discussed. Salient among the principles which they exemplify is the utility of the notion of training-as- work in the search for a relevant educational response to the developmental needs of rural communities.

> When schools for the 'disadvantaged' act to regenerate the patterns of educating the 'advantaged' we get some sense of how far we have gone astray[1]

THE PROBLEM: A COUNTER IDEOLOGY FOR KENYAN EDUCATION

A rising tide of professional sentiment in the world is questioning a view of society which equates schooling with education. Inspired by the credo of 'relevance' this tide is challenging the validity of existing patterns of educational provision and stimulating a search for alternatives. The leading apostles of this contagious iconoclasm view the school itself as the major obstacle to economic and social development and advocate its abolition.[2] The revelationary force of their criticism has stimulated widespread and beneficial rethinking about the purposes and process of education. However, despite the trenchant logic which has accompanied it the 'deschooling' prescription is not based on new empirical understanding of the relationships between schools and society. It seems rather to reflect a heightened awareness of such pressing social problems as educated unemployment, economic inequality and student elitism and the choice of institutional education as a scapegoat for them. The decision to abolish the school seems premature unless it derives from a comparision of both school and non-school types of educational programme and an empirical assessment of their relative contribution to economic growth, employment creation, social equality or whatever are the principal goals of national policy.

In the absence of definitive data which point inexorably to the abolition of the school it seems appropriate to treat educational enterprises outside the formal system not as self evident substitutes for it but as shadow systems. These shadow systems have meaning firstly in the extent to which they may complement the formal system by meeting needs which it is not covering, and secondly in the extent to which they display principles which may have wider application in the national system. A number of such shadow systems have sprung

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1. M. Huberman, 'Reflections on Democratisation of Secondary and Higher Education', (Paris; Unesco, 1970) p. 17. The term "Shadow System" is borrowed from this stimulating paper.

2. For impressive statements of the deschooling idea see I Illich, Deschooling Society, (New York: Harper and Row, 1971), P. Freire, Pedagogy of the Oppressed, (New York: Herder and Herder 1970) and E. Reimer, School is Dead (London; Penguin Books, 1971).

up recently in various countries. Examples range from the British Open University and the American Free Schools to the National Service of Tanzania, Brigades in Botswana and Escuela al Campo in Cuba. The claim for such practices is often that their flexibility enables them to be more responsive to the needs of individuals that existing educational institutions. Their major potential however may be that by creating a challenge to established institutions they can stimulate reform on a nation-wide scale.

Kenya has some important shadow systems one of which is the Village Polytechnic Movement. The purpose of this paper is to identify some characteristics of this particular shadow system and to investigate their implications for wider educational policy. In broadest terms village polytechnics are low-cost post primary training centres in rural areas.[3] They are part of the response to two familiar and pervasive features of the Kenyan scene: the situation in which approximately 150,000 pupils leave primary school each year with no prospect of regular wage employment in the modern sector of the economy, and the frequent assertion that community self help can ameliorate this situation. They are widely perceived to be both a means of alleviating unemployment and a practical manifestation of an official rhetoric which exalts the productive potential of self help activity. Yet little empirical evidence has been produced to support the accuracy of this dual perception or to give it any precise substance. Between 1966 and 1972 more than 53 village polytechnics have been established and demand for them is expanding.

The main contention of this paper is that the long term significance of the polytechnic movement lies not simply in its reflection of 'harambee' or its role in vocational training, but in its potential as an educational experiment. A guiding assumption is the view that it is more appropriate to treat the village polytechnics as an ideological movement than as an institutional prescription. One way of illuminating the elements of this ideology is to regard the village polytechnic movement as the antithesis of the model of the formal secondary school system. Thus the essence of the ideology can be seen as an attempt to break away from conventional concepts of academic schooling and to develop types of training which are rooted in practical need and which convey

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3. Momentum for the development of Village Polytechnics followed the recommendations of the Kericho Conference reported in J.R. Sheffield, 'Education, Employment and Rural Development (Nairobi: East African Publishing House, 1967) and the publication of After School What (Nairobi, Christian Council of Kenya, 1966) The best account of the origins and early development of village polytechnics is contained in J.Anderson, The Village Polytechnic Movement, SRDP Evaluation Report No 1 (University of Nairobi, Institute for Development Studies, August 1970)

a sense of individual purpose and a capacity for continuing self instruction. Expressed thus badly, such principles are broad to the point of platitude. The assumption that they are given substance, albeit embryonically in the village polytechnic movement prompts the discussion which follows. Having identified the principles of interest as the opposite of those exemplified in the secondary school system, we attempt to assess their strength within the village polytechnic movement and their implications for the provision of employment, the concept of self help and the diffusion of a new educational ideology.

ELEMENTS OF AN ALTERNATIVE IDEOLOGY

Contrasts in Educational Ideology in Kenya

Dimension	Formal Secondary Schooling	Village Polytechnic
Objectives of Training	Short term: graduation to next level; long term: wage employment in modern national economy	Local self employment and family improvement.
Catchment & Service Area	National	Local
Recruitment Criteria	Formal qualification & ability to pay	Interest
Capital facilities	High cost institutional	Low cost minimal
Curriculum	Standardized & group oriented	Unbounded & individualized.
Medium of instruction	English	Vernacular or Swahili
Standards	National certification	Self & local demand
Form of instruction	Classroom teaching	On the job learning
Leadership	Authoritarian	Participatory-communal
Organization	Inflexible	Flexible
Time period	Chronological sequence of pre-determined periods	Time necessary to master skill in question
National administration	Centralized-hierarchical	Local autonomy
Responsibility for leavers	Vague societal	Specific community

The chart above summarises some of the dilemmas faced by the polytechnic movement as it tries to give substance to a new conception of education. These dilemmas are encountered in decisions regarding objectives and forms of organization. They relate to a variety of dimensions which can be characterized in polar extremes. On each dimension one end of the continuum is represented

by the practice of the formal secondary school system and at the other is located the ideal of the village polytechnic movement. The temptation and tendency is for the village polytechnic movement to be increasingly influenced by the model of conventional schooling on each dimention. The dilemma is thus at what point to hold the line and for what reasons. The achievement is the degree of success in doing this.

This is not an exhaustive list and as with any ideal type model it is an oversimplification of actual conditions. However, it does serve to summarize some important specific differences between the practice of secondary schooling and the objectives of the village polytechnic movement which amount to distinct educational philosophies. In the following pages we draw on data from three small studies of village polytechnics in order to illustrate the achievements, the dilemmas and the potential of the village polytechnic movement. The meaning of the findings which are discussed lies in their relationship to the stated objectives of the Village Polytechnic Programme. These are summarized in a recent handbook produced by the Youth Development Division of the Ministry of Cooperatives and Social Services as follows:

> A VP is a low-cost training centre in a rural area. It aims at giving primary school leavers from that area skills, understanding and values which will make them able to look for money-making opportunities where they live, and to contribute to rural development by building up the economic strength of their own community.[4]

The Occupational Activities of Village Polytechnic Leavers

An examination of what has happened to leavers is probably the best starting point in the quest for understanding the achievements, dilemmas and potential of village polytechnic development. Relevant data are summarized in table 1.[5] In relation to the objectives of the village polytechnic programme the important questions are whether leavers work in rural or urban areas, whether their occupations make use of the skill acquired during training, and whether they work for an employer or are engaged in individual or self employment. The overarching criterion of interest is whether the polytechnics are meeting a need which is not adequately provided by other types of training. The figures should be interpreted with caution. In the first place figures obtained at a single point in time for a group of notorious mobility prevent any assessment of trends in the patterns which are pictured. Secondly they are for some cases the product of unsystematic information gathering on the

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4. How to Start a Village Polytechnic, (Nairobi: Ministry of Cooperatives and Social Services, 1971) p.4

5. These data were obtained from village polytechnic managers.

part of the manager. For example the distinction here between 'unknown' and 'at home' is not clear as most managers concentrate on trainees who are known to have found employment and whom they see at the market and hear about through friends. Thirdly the classification involves an element of subjective judgement in the decision as to whether or not an acquired skill is actually being applied in a given job. However, considering the national figures in conjunction with the more detailed findings from a specific case study enables us to confirm the validity of the national picture and to enrich it with instructive qualification.[6]

As table 1 shows the largest single group of leavers are occupied in a type of wage employment which makes use of the skill acquired in polytechnic training. The bulk of this group are either carpenters or masons. A second category of wage employment comprises those who are not making use of their skill, of whom the majority are either labourers or domestic servants. Self employment describes seventeen per cent of the national sample, although this term covers varying degrees of regularity of employment, ranging from the well organized building groups who receive successive contracts, to those who alternate farm work with intermittent use of their acquired skill in periodic contracts as the demand arises.

The overall picture shows that a total of 65% of male leavers and 54% of females were known to be in some kind of remunerative employment or further training at the time of the survey. The more specific case study data suggest that the proportion of leavers in some kind of money earning activity is probably higher than indicated in these percentages. This is because the 'unknown' category of table 1 almost certainly contains some who have secured employment of some sort. Similarly those classed 'at home' may well be engaged in fairly full time farming or market gardening with intermittent sales. At the same time the evidence makes clear that while a large proportion of leavers are engaged in a wide range of occupations these activities vary greatly in their degree of formality, regularity and remuneration. For example among the 69% of leavers from Maseno who are receiving regular payment wages range from 50 shillings per month to over 400 shillings for two individuals, with a median wage of approximately 130 shillings.

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6. Detailed analysis and presentation of data relating to this case study are contained in D. Court, 'Village Polytechnic Leavers: The Maseno Story', Working Paper no. 70 (University of Nairobi, Institute for Development Studies, 1972)

An interesting statistic contained in table 1 is the fact that approximately thirty per cent of all leavers and almost fifty per cent of those receiving regular money are occupied in urban areas.[7] This figure is perhaps high in relation to the fact that School Certificate holders with a Grade III or EACE level pass are now part of the competition for any kind of remunerative job. However it seems that employers prefer polytechnic leavers to secondary school products because they cost less and they are believed to have relatively greater aptitude for skilled technical tasks. The time may be here when School Certificate holders improve their chance of employment if they conceal their qualifications.

The pattern contained in table 1 is an indication of substantial achievement and perhaps also a source of long term concern. The achievement lies in the fact that polytechnic training seems to have led to money making opportunities for a sizeable number of primary school leavers who might otherwise not have had such chances.[8] However a number of pointers within the data minimize the grounds for complacency. The first of these is the relatively large proportion of leavers who have found work in town, although it must be remembered that the majority of all leavers (70%) have remained in rural areas. If, as seems likely, there is increasing competition from secondary school products, towns are unlikely to be able to continue to provide the present relatively high proportion of opportunities for polytechnic leavers. Secondly it is clear that a large part of the measureable achievement of village polytechinics is contained in their ability, during the past three years, to meet a significant demand for construction by providing carpenters and masons. Localized demand for construction is not insatiable and its future rate of expansion is unpredictable.

Village polytechnics have not been in existence long enough for conclusive occupational trends to have emerged. Nevertheless the pressures just referred to have clear implications. One which is substantiated by evidence from the case study is the growth of informal occupational patterns in which farming is interspersed with wage or self employment in response to fluctuating demand. As an extension of this tendency it is conceivable

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7. The term urban in this table refers to Nairobi, Nakuru, Kisumu, Mombasa or Kakamega.

8. Some perspective on these figures can be obtained by comparing them to data on primary school leavers. See L. Brownstein, Education and Development in Rural Kenya: A Study of Primary School Graduates (New York: Praeger, 1971) and J. Moock, 'Pragmatism and the Primary School the case of a Non Rural Village', (University of Nairobi, Institute for Development Studies, Discussion Paper 135, 1972).

that the priority target group for polytechnics will become those presently classed 'at home' and the research task to discover what they are doing, what other opportunities can be exploited and what kinds of training might be relevant. This tendency points to the importance of defining polytechnic objectives and evaluating their achievements in terms wider than the size of wages earned by their leavers. Up to the present it seems that polytechnic training has fitted into the interstices of the national economy and technical training programme. It has achieved what it has without making major inroads into the structure of economic and educational demand in rural areas. However its most constructive long-term contribution probably lies in the extent to which, through its organization and impact, it will be able to make such inroads.

DILEMMAS OF VILLAGE POLYTECHNIC DEVELOPMENT

a) The Objectives of Training

As implied by the diverse pattern of leaver activity the central dilemma of village polytechnics has been to define the precise objectives of the training programme which they provide. Inevitably at first their objectives were couched in terms comprehensible to the potential clientèle and emphasized as likely outcomes money-making through wage earning or self employment. That initial objectives responded to a genuine need has been suggested by the data presented in the previous section. A consequence of this very success however has been a tendency of some polytechnics to view themselves as vocational training centres and thereby to place themselves in unproductive competition with the more organized and better endowed technical schools. At the same time the relatively small proportion of leavers who have achieved successful self employment confirms that this is an extra-ordinarily difficult role requiring an entrepreneurial flair imagination and energy which are not likely to be in large supply among those who for the most part are the self-declared rejects of the formal system. Thus recently within the village polytechnic movement a faint but discernible attempt can be perceived to broadern the objectives of village training to anticipate the composite pattern of activity which the evidence suggests is the likely reality. According to this perception training should aim at the provision of skills and values which, in addition to fitting people for recognized money-earning roles, motivates trainees to seek out new latent opportunities but also to perform tasks of community and family improvement which may not have any immediate monetary returns. Because training alone does not create jobs the problem is that of identifying or creating the demand at which to direct instruction.

b) Curriculum and Internal Organization

Ambiguity in the objectives of polytechnic training is inevitably mirrored in dilemmas concerning the organization of that training. Where a clear local demand can be identified it is a relatively straight-forward task to mount the corresponding training course. Thus for example the courses in carpentry, masonry and tailoring, which exist at almost all polytechnics, are responses to conventional but none the less important community requirements for construction and clothing. Brick-making, well-digging, pit sawing, charcoal making, typing and book-keeping are further examples of courses which respond to recognizeable and traditional demands. Other courses represented at village polytechnics involve more speculative attempts to create a new demand or provide locally what previously had been obtained from outside the area. Examples here are cloth-printing, bee farming, bread-making, vehicle maintenance and metal-working associated often with the development of an acceptable new village technology.

Associated with the challenge of creating local demand is the issue of the quality of production which polytechnic training should aim at. The dilemma here is that perfectionist insistence on the highest standards of workmanship may make the product too expensive for local demand or create among trainees a desire for expensive work conditions which can only be satisfied in towns. At the same time an aspect of localized development concerns the education of the community to demand locally produced goods and services whatever their quality, in preference to 'imports' from outside the area.

A related issue in the internal organization of village polytechnics has been the length of acourse and the amount of general education which should be included in training. One of the most innovative ideas in the polytechnic programme is the view that the length of a course should be governed exclusively by the amount of time necessary to master the desired skill. The objective is to use demonstrated on-the-job expertise rather than the familiar chronological time or certification as the measures of competence. Yet, given the deficiencies of primary schooling, post primary skill training to be effective, probably has to be embedded in some general education designed to enhance as individual's understanding of his environment.[9] Most polytechinics provide courses of one or two years duration. The pressures of

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9. A development of this theme can be found in W.Elkan 'Out of School Education and Training for Primary School Leavers in Rural Kenya: A proposal', International Labour Review Volume 104 No 3 September 1971)

the conventional secondary school model and of the national economy are great and the ubiquitous time-table contains a number of entries familiar to the secondary school. For example training local youth for local employment does not necessitate instruction in English, but the requirements of the national modern sector of the economy create pressures for English classes and an English medium of instruction. Similarly the requirements of the modern sector as opposed to the informal local economy create a demand for Grade Tests. There is clear evidence that a Grade Test pass, even at the lowest level, is at present a guarantee of wage employment for polytechnic leavers, and so polytechnics are faced with their own version of the certification syndrome and even an embryonic repeater problem. The same pressures have served to keep instruction in improved agriculture as a surprisingly minor activity at most village polytechnics, with some notable exceptions, given the original intention that it would be a central part of all training. Although there are parts of Western and Central Provinces where pressure on the land rule out future farming for many primary leavers this is not yet the case for most village polytechnic areas.

An important principle which is implicit in instruction at polytechnics is the merger of teaching and practice and the consequent dual role of instructors as teachers and participants. This also serves to reduce the conventional gap which inhibits real leaning in the formal system. Thus at the most vigorous type of village polytechnic one can see the emergence of a new type of instructor who is not only competent at imparting his trained skill but is imaginative and energetic in seeking ways in which his trainees can apply it.

The vast majority of instructors at village polytechnics are Kenyans and in this respect polytechnics again exemplify an important principle of self reliance which contrasts markedly with the formal secondary school system. However, there is an evident tendency for some polytechnics to rely on overseas volunteers to personify the new prototype instructor. Volunteers often have a more sophisticated, although not necessarily more relevant, technical training than their colleagues. Without the perspective of local tradition and the prospect of a life-long stay they are tempted to provide seductively ready answers along with skills and imagination. As a result volunteers at some polytechnics have been cast into artificial positions of leadership and responsibility. Undoubtedly too, part of the attraction of volunteers is their proven ability to be a conduit for funds from their home country long after they have left the polytechnic.

Such a situation is counter-productive because it threatens to perpetuate a spirit of dependency on those from outside the very community which in the last resort can alone sustain the village polytechnic. By and large however the village polytechnic movement has managed to utilize the skills and perspectives of volunteers without succumbing to dependency. This is because it has limited and strictly regulated their use in a careful matching of skills and requirements.

c) The Catchment and Service Area

The essence of the concept of village polytechnics is that they exist for the service, education and enrichment of their surrounding community. The corresponding dilemmas are whether the limits of the local area should be the Location , the District or the Province and how strictly local recruitment should be preserved. Two indicators of the strength of a polytechnics relationship with its surrounding community are firstly whether trainees are recruited from the local area and secondly whether their subsequent work takes place there. With regard to the first criterion it could be argued that wage employment outside the locality results in beneficial remittances to it. It is certainly inevitable that a proportion of trainees will end up in positions which are scattered across Kenya. However if a majority do, it is clear that the village polytechnic is not serving the essentially local function for which it was designed. The national survey of trainees reveals that a majority (63%) of those attending village polytechnics live in their home location.[10] Data already referred to indicate that a slightly larger proportion end up in rural rather than urban locales and, on the evidence of the case study, this is usually within a ten mile radius of the polytechnic. At the same time the proportion of recruits from outside their home area rises dramatically for those polytechnics which provide boarding facilities. Pressure to provide boarding facilities is present at almost all polytechnics and if acceded to it becomes the most obvious concession to the mythology of institutionalization. Furthermore the higher fees necessitated by such provision tend to encourage the recruitment of 'richer' outsiders in preference to the relatively poorer locals.

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10. Findings from the survey referred to in this section are reported in D. Court, 'Some Background and Attitude Characteristics of Village Polytechnic Trainees', (University of Nairobi, Institute for Development Studies, Staff Paper 110 July 1971).

d) Recruitment and Retention

An important criterion for assessing village polytechnics is whether their clientele is the appropriate one in terms of need. Dilemmas on this issue relate to the desireable background and aptitudes of recruits and the size of fees which should be charged.

The intended target group is that of primary school leavers. Village polytechnics are undoubtedly serving people in this category as virtually all trainees completed their formal schooling at Standard VII. However although Standard VII leavers are the recognized pool for recruitment there is little selectivity within this pool. Observation reveals that approximately 50% of polytechnics are actively searching for applicants. In this situation an individual's ability to pay required fees becomes the principal criterion of recruitment and selection is a formality. However it is interesting to note that the polytechnics which have the most stringent selection procedures - giving attention to both motivation and aptitude - are also regarded as the most successful in terms of individual and community benefits. For the long term viability of village polytechnics direct measures of the aptitude and inclination of recruits are likely to be more effective than the indirect indicators of ability and willingness to pay fees.

The problem of balancing a desire to serve the neediest primary leavers against the necessity of charging fees has not been clearly solved. All village polytechnics charge fees and these range from 40 shillings per year to 200 shillings for non resident courses.[11] Fees inevitably have a selective and exclusive consequence. At the same time it seems that the complete absence of fees can lead to an unproductive sense of dependency among individual trainees. It is also possible that fees serve a positive psychological function in enabling parents to fulfil a minimum level of obligation to provide education for their offspring. Data from the leaver case study are informative regarding the deleterious consequences of excessive fees. Approximately 44 per cent of those who enrolled did not complete their course and of this group 66% cite lack of requisite fees as the reason for their premature departure. The remainder usually left because an immediate wage earning opportunity had presented itself. There is reason to believe that this disconcertingly high drop-out rate is not atypical. There is an admirable

11. For further detail on fees see D. Thomas, The Financing of Adult Education in Kenya, (Nairobi: Board of Adult Education, 1972)

attempt within the village polytechnic programme to establish the principle that course length depends upon individual performance rather than pre-established time periods. Nevertheless it seems likely that for most types of polytechnic training completion of the course should be regarded as a minimum precondition for the achievement of competence. The evidence from the case study is clear on this score. Those who completed their course are more likely to obtain and to hold remunerative employment than those who did not. If, as seems likely, those who do not complete their course make little contribution to themselves or to their community, the role of fees in contributing to drop-outs needs to receive particular attention. The decision on the level of fees has to strike a balance between maximum equity in the provision of opportunity and maximum efficiency in the use of training resources. If the overall drop out rate is in reality as high as 44% this suggests that neither of these criteria is being adequately met.

e) Centre-periphery relationships

A further dilemma concerns the nature of the overall administration of polytechnics. Secondary Schools in the formal system are governed by regulations of the National Ministry and are subject to a high degree of standardization regarding syllabus, time table and so forth. Polytechnics whose meaning is a response to local needs cannot be governed by a similar degree of centralization. Yet some kind of relationship with a central authority is necessary in order, among other things, to coordinate mutually useful experience, to raise and allocate funds, to stimulate local management committees - whose members tend to be characterized by the aura of past achievement rather than the promise of future inspiration - and to counteract the at times stultifying effects of age-grade deference systems. The dilemma is the familiar one of achieving the optimum balance between central inspiration and local autonomy. It has been encountered by village polytechnics most notably on the question of financing and committee structure. With regard to financing the issue has been how to organize centrally provided grants in aid so that they act as catalytic seed money for inspiring development and do not set in motion the dependence syndrome - on Nairobi or Government - which serves to immobilize so many projects. The formula has been for village polytechnics to be categorized according to their demonstrated degree of local self help and for central grants - paid in instalments after strict accounting - to be in direct proportion to this self-help component. Organizationally the Village Polytechnic Movement has reflected a triangular partnership between the local community represented by the Management Committee, the National Christian Council of Kenya and the Government.

Following the initial pioneering work of the NCCK the Government has now become the major partner in central financing as the number of polytechnics has increased, and this has been reflected in a recent reorganization of central committees. The challenge of balancing central control and local authonomy is being met by use of a Central Committee on which all village polytechnics are represented, itinerant Provincially based Field Officers, and the establishment of a Mobile Research and Training Centre whose personnel embody relevant expertise and take it in intensive periods of instruction to where it is needed.

f) Community Education

Having arisen in part out of community reaction to the deficiencies of primary schooling village polytechnics face the dilemma that to sustain themselves they need to convert this negative sentiment into diffuse positive support for the new type of service facility which they represent. The objective is to secure community recognition of a new range of educational symbols. It requires people to see meaning in such unfamiliar characteristics as deliberately curtailed expansion, minimal structures, training which is cheap and immediately applicable and close student teacher cooperation. Above all it requires a sufficiently strong expectation of mutual benefit that members of the surrounding community assume specific responsibility for the occupational destiny of trainees. This type of recognition is less likely to come from the frequent exhortory rallies, at which the hypothetical virtues of village polytechnics are extolled, as from the impact of the achievements and views of trainees themselves. It is therefore instructive to consider trainees' concept of the village polytechnics, their role in it and their expectations from it.

An interesting distinction among trainees is apparent between those who have adopted, or at least can articulate, an approximation of the ethic of the village polytechnic movement, with its stress on self reliance and relevant learning of rural occupations, and those who continue to think of the polytechnic as a formal school and to bemoan the lack of outside assistance and available facilities. It is clear from the tone of responses that a large number of trainees still regarded the polytechnic as a 'school' and see it as part of the academic educational system and mobility ladder. It is also clear that the belief in self help is not widely or deeply entrenched among these trainees. Thus there is a tendency among this group to think primarily in terms of what the polytechnic could do for them if facilities were augmented by outside aid or government take-over,

rather than what they can do for themselves by means of the polytechnic to exploit the potential of local conditions and facilities. The tendency to look first to an outside solution to any problem is manifested too among some in a determinism which sees an external Deity as a very real dispenser of opportunities in the face of whom the individual can do little to influence his own destiny. Thus among this group one finds a demand for all the trappings of the academic school as exemplified in the following comment which is not untypical of the attitude of many trainees towards their polytechnic:

> I would like to have a strong library; different types of food and well cooked, more instructors, more instruments for use; not be as private candidates, dormitories and dining room, electricity, television and broadcast news. I would like a big space for the polytechnic compound. Uniform would be black long trousers, white shirt then red coat. Wearings for practical are to be separate. I would like the compound to be beautified by different flowers arranged in order. A person for cleaning be employed. The polytechnic should have their own bus for help in sports journeys. Lime roads should be made within the compound. Clean water should be supplied through pipes. The polytechnic should supply pocket money. Breakfast is needed then a strong lunch and lastly light supper at 3.00 p.m.12

Contrasting with the notion of polytechnics implied in the above quotation are attitudes which suggest that a substantial minority of trainees have imbibed at least something of an alternative ethic. This group sees the polytechnic as a means for the gaining of new locally applicable skills and their suggestions for change are related to a perception of potential money-making opportunities in the locality.

Thus:

> Village polytechnics are good because they help students who have failed CPE and even those who have passed and have got no money. They are better than Harambee Secondary schools even those ones which are looked after by the government because when you have left your school you will go nowhere unless you are trained first like those in village polytechnics.

The dichotomy between types of trainees which has just been illustrated seems also apparent in the occupational expectations of trainees. About half of the sample of trainees surveyed have a relatively realistic idea of their prospects on leaving the polytechnic, citing essentially local activities as their likely occupational destiny. The data tend to confirm the view of those who have stressed that East African youth are realistically moderate in their expectations; they seek a job of any sort and do not think exclusively in terms of white collar positions and their academic form of

12. Responses to an open ended question: 'If changes could be made in your village polytechnic what new things would you like to do?'

preparation. This point, however, should not be over-stated. It is equally clear that a similar proportion of trainees retain unrealistic notions of employment possibilities and an exaggerated faith in the power of the village polytechnic to help them. Even those whose responses seem realistically moderate tend to accompany their realism with soaring flights of aspiration or regard employment as a temporary prelude to a more substantial urban occupation. In particular working for a company or the government loom large in the mythology of trainee expectations.

EMERGING SHADOW SYSTEMS

The previous pages have illustrated some of the dilemmas facing the village polytechnic movement as it attempts to evolve new types of relevant education. In the struggle to resolve these dilemmas each polytechnic is unique in its response. However there appear to be five discernible types of response, the characteristics of which are sufficiently distinct to merit classification. These types can be categorized as: conventional-vocational; settlement-vocational; centralized-entrepreneurial; centralized-cooperative; and dispersed-cooperative.

a) Conventional-Vocational: Maseno.

Perhaps the most easily recognizeable type of village polytechnic is the kind which appears to be evolving into a low-level vocational training centre. Prototypes of this variety are Maseno and Ndere polytechnics where one confronts a site with extensive buildings including both workshops and regular classrooms. In one case dormitories are an established feature while in the other trainees sleep in classrooms pending their construction along with the installation of electricity. The main function of both is vocational training in carpentry and masonry for boys and tailoring for girls, and this training is accompanied by an emphasis on grade tests. Compared with other types of village polytechnic their leavers have met with a high measure of success in obtaining employment in the wage economy.

b) Settlement-Vocational: Mucii Wa Urata

A distinct type of vocational training centre is illustrated by Mucii Wa Urata which demonstrates the opportunities arising from association with a newly prosperous community. Mucii is located in the Mwea Rice Scheme, which is one of the most successful agricultural schemes in Africa, and has geared its training to the demand for new services and skills associated with the scheme. A novel example has been Mucii's tractor driving course. Furthermore almost half of the trainees at Mucii spend the second of their two year course in field apprenticeships on the rice scheme which are supervised by polytechnic instructors. At the same time the opening up

of new road networks in the area has provided contract opportunities which polytechnic trainees have been able to exploit. Mucii has also attempted to directly involve itself in the surrounding community by openning its facilities as a social and conference centre, in order to provide social conesion and overcome some of the artificiality of the new community arising from the heterogeneous and partly transitional quality of its composition.

c) Centralized Entrepreneurial: Keveye

Associated with the concept of self-employment is the emphasis in many polytechnics upon the utility of commercial subjects. In most cases this belief has led to little more than the inclusion in the syllabus of rudimentary instruction in accounting and business practices. At one place, Keveye, however it has been elevated to become a major principle of polytechnic instruction. The development is recent and arose largely because of the proximity in Kakamega of the Partnership for Productivity enterprise. The essence of the PFP is to identify budding businessmen and to provide them with a loan in the anticipation that successful business will generate its own employment. Translated to the polytechnic this notion has resulted in courses which provide intensive doses of the entrepreneurial ethic and accompanying skills in accounting and finances. The approach is explicitly elitist in that it is not expected that more than a few individuals in the class will reveal the ability necessary to make a success of self employment. As Keveye has not yet had its first batch of leavers it is too early to evaluate the utility of this approach, but it does represent a distinct ideological strand in the pantheon of approaches which constitute the village polytechnic movement.

d) Centralized-Cooperative: The Ahero Complex

Contrasting markedly with the stress on individual enterprise of Keveye are the cooperative principles on which training in the Ahero complex on the Kano Plains are organized. The central multi-purpose training facility at Ahero acts as a coordinating centre for a number of different but interrelated polytechnics, each specializing in particular activities, the products of which are marketed through a central cooperative shop. There are a number of novel aspects of the programme. Intensive agricultural training is given to all trainees. Additionally trainees learn a skill and, from the beginning of their training, receive a small salary and thus are exposed to the problem of money management. From the start they can consider themselves as workmen as opposed to students and they have a sense of identity as labourers because they are training while on the job.

More important the training is viewed as preparation for membership of a cooperative organization. Thus on completion of their programme trainees have the chance to join a cooperative organization which has elements of a commune about it in that it is both a living place and a base for work operations. The first of these is the Ahero Building Cooperative Construction Company which with its twenty six members has been remarkably successful in creating a name in the area for good and cheap work. Independent in organization it has nevertheless benefitted from the retention of advisory and service links with the 'parent' training centre eight miles away. A number of new cooperatives are already in an advanced stage of development. The objective is a complex of similar cooperative organizations in surrounding districts which will parallel the web of training polytechnics. Their combined needs and resources will then permit the employment of architects, engineers and accountants who will serve the whole group. The important principle illustrated here is the benefit of scale through cooperation. Links with the community are strengthened by use of buildings as centres of adult education and social activities which again presents an important exemplary principle for the formal school system. This rapidly developing complex has benefitted from substantial initial external resources in the form of capital, leadership and volunteers provided under the auspices of the Catholic Church. Nevertheless it is one of the most significant developments of the village polytechnic movement because of the way in which it builds a life for leavers into the initial conception of training.

d) Dispersed-Cooperative: Soy

The principle of training as work is the essence of Shadrack Opoti's conception at Soy which is perhaps the most interesting of all developments within the village polytechnic movement. In this conception the polytechnics are not a training institution or school but a support base for outside workers. Trainees never leave the institution as such because they have never joined it and thus the concept of 'leaver' becomes an irrelevant one. Trainees join a work-group rather than the polytechnic itself. They join by paying a once and for all registration and tool fee and can remain with the group for as long as they wish. Work groups are encouraged to take a name and write their own constitution. Expectations engendered by the notion of school are minimized as there are no termly fees and indeed no terms or vacations. Training simulates work conditions as much as possible and lasts only as long as is necessary for the acquisition of the skill in question. Thus for two of the most imaginative activities which have emerged from Soy - systematic bee-keeping and rural bakeries - the training period is two weeks. Initially the work group is part of the Lugari extension programme and is supervised by field workers

and instructors, thus keeping a direct link between the needs of the community and new skills. The aim is for each group to develop into an independent working cooperative. This idea of the work group has become the central element in the evolving concept of the village polytechnic movement.[13] At Soy work units of approximately ten members each have been established in building, carpentry tinsmithing, tailoring and vegetable growing. Accompanying these skill-training projects aimed at productive enterprise is an agricultural extension programme in which four field workers take their expertise to individual plot holders. Infusing all the activities at Soy are the principles of relevance, low cost and simplicity as exemplified in the concentration on primary technology, exclusive use of local materials and Opoti's quest to revive traditional methods of production. There is a 'Luddite' strain to some of this activity - as for instance in the view that for the progress of local baking, bad roads are better than good ones because they deter the vans of Elliots's Bakery - but the basic principles are those of relevant education.

CONCLUSION: EMPLOYMENT, SELF HELP AND THE IMPACT OF SHADOW PRINCIPLES UPON THE ESTABLISHED SYSTEM OF EDUCATION

In the foregoing pages data from the experiences of the village polytechnic movement have been used to illustrate its achievement, problems and potential in the task of national development. Part of this demonstrated achievement has been the ability of village polytechnics to equip youth for money-earning occupations which they would not otherwise have obtained. The continued ability of leavers to find recognized money-earning occupations has been questioned. It has been suggested that their unique future contribution is more likely to lie in their capacity to provide skills and values appropriate to the creation of new roles. These are likely to be roles in the informal employment sector where the bulk of Kenyans are occupied and roles which while productive and inherently satisfying do not always have immediate monetary returns attached to them

The major problems of village polytechnics have derived from the pervasiveness of the ethic of formal schooling. Some of the effects of this ethic in patterning the development of village polytechnics have been described. Part of the achievement and much of the potential of the village polytechnic movement lies in the extent to which polytechnics, in face of this pervasive ethic, have still been able to exemplify significant new principles of education. Among these principles are those of flexibility, availability, individualization and relevance - in the notion of training as work and as a response to felt need - all of which are in striking contrast to the operating principles of

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13. For additional case study detail on village polytechnics see J.R. Sheffield and V.P. Diejemaoh, Non Formal Education in African Development, (New York: African American Institute , 1972) p. 75-86

the established secondary system. The village polytechnic movement is not unique in Kenya for displaying important new educational principles. They can also be found for example in the National Youth Service. Together such related experiments represent a large and growing consituency for alternatives to formal schooling which amount to the Kenyan Shadow System. There seems little doubt that once structural change in Kenyan education occurs it will draw on principles exemplified and tested within the shadow system.

However the important question for the future of Kenyan education concerns the likelihood of structural change and the impact of this shadow system upon the established pattern of schooling. In trying to answer this question one confronts the fundamental issue of the social nexus of institutions and the way in which they both respond to and mould social demand. Village Polytechnics face a particular dilemma, in that having arisen out of community demand they can only survive by changing the terms of that demand in a process of community education. The evidence suggests that in their early stages village polytechnics tend to be sustained by the energy and imagination of remarkable individuals. In a number of cases— notably at Ahero and Soy--there is evidence that imaginative leadership has been transformed into community consciousness and a mutually reinforcing relationship. However available data on trainees expectations and activities suggest that community perception of polytechnics as a meaningful alternative to formal schooling is not widespread. The analogy and threat for village polytechnics are the fate of many Harambee Secondary schools. Whatever Harambee schools might represent in terms of community mobilization and expanded opportunity they are rooted in the ideology of formal schooling and, with a few notable exceptions, they have made little contribution to the development of educational philosophy in Kenya. It is too early to assess the impact of the new Institutes of Technology upon the development of village polytechnics. Depending upon the level of their operation they could either provide prospects of promotion to polytechnic leavers and hence strengthen the polytechnics, or alternatively exhaust community demand for technical training of any sort. It is possible that the principles of the village poytechnic movement will take root extensively in areas such as part of the Rift Valley and North Eastern Provinces where the ethic of formal schooling is either unattractive or unknown. Beyond these areas it appears that the Shadow System will have to await modifications in the present social structure linking schooling and wage incentives before it can begin to have an extensive impact upon educational philosophy and practice in Kenya.

TABLE 1

Activities of Village Polytechnic Leavers in Urban and Rural Areas

	Further Training	Repeating Primary School	Wage Employment Using Skill	Self Employment Using Skill	Wage Employment Not using Skill	Looking For Work 'At Home'	Untraceable	Total
Males								
Urban	28	0	42	4	27	8	0	109
Rural	6	8	46	62	17	71	60	272
Male Total	34(10%)	8 (2%)	88 (24%)	66 (17%)	44 (12%)	79 (20%)	60 (15%)	381 (100%)
Females								
Urban	5	0	7	3	8	0	0	25
Rural	5	1	2	14	4	34	23	83
Female Total	10 (8%)	1 (1%)	9 (8%)	17 (16%)	12 (11%)	34 (33%)	23 (23%)	108 (100%)
Grand Total	44 (9%)	9 (2%)	97 (20%)	83 (17%)	56 (12%)	113 (23%)	83 (17%)	489 (100%)